High Elevation Aquatic Ecosystems Restoration:

Application for a Discharge Permit with the State of California, Central Valley Water Quality Control Board

Frequently Asked Questions

U.S. Department of the Interior
National Park Service

Sequoia and Kings Canyon
National Parks

California

Why is a permit needed?
In 2016, the National Park Service completed a plan to restore a portion of the high elevation aquatic ecosystems in Sequoia and Kings Canyon National Parks to natural conditions. Restoring habitat by removing nonnative trout from historically fishless lakes and streams will allow native species and ecosystems to function more naturally, and will increase their resistance and resilience to other ongoing threats. Fish removal will be done using physical methods in the majority of sites, and piscicides where physical methods are infeasible. A piscicide is a substance that is toxic to fish and can be used to remove undesirable fish from a specific treatment area. The CFT Legumine™ formulation of the piscicide rotenone is registered for sale and use in California. The use of CFT Legumine™ in California requires a National Pollutant Discharge Elimination System permit to be obtained from a state Regional Water Quality Control Board.

How many lakes and streams will be affected by piscicide use?
Piscicides will be used to remove nonnative trout in nine treatment areas. The treatment areas include 33 waterbodies (4 lakes, 25 ponds, and 4 marshes), or about 6% of the parks' 550 waterbodies that contain nonnative trout. The treatment areas also include approximately 16 miles (25 km) of streams, or less than 1% of mapped stream habitat in the parks.

When will the piscicide treatments be implemented?
The first of the nine treatments using piscicide is expected to occur in late summer 2018. The remaining treatments are expected to occur about every two years, and thus are expected for completion by about 2035.

What type of piscicide treatment method will be used?
Piscicide treatment methods include applying extremely low concentrations of the CFT Legumine™ formulation of rotenone to lakes and streams and will be used only where physical methods are infeasible.

How will the use of piscicides affect other species?
CFT Legumine™ is toxic to trout at extremely low concentrations. It can also be toxic to other gill-breathing organisms including aquatic invertebrates, zooplankton and tadpoles. Effects on tadpoles will be mitigated by moving tadpoles to adjacent habitat outside the treatment area. Aquatic invertebrate and zooplankton populations will be reduced immediately after treatment. Studies have shown that most species typically return to pre-treatment levels within 1 year, while a few species take longer (3 to 5 years) to return to pre-treatment levels.

How long will a lake or stream be affected by piscicides?
There will be short-term impacts to surface water quality. Depending on environmental conditions (solar exposure, lake depth, wind, pH, etc.), most of the chemicals will break down in several days to several weeks. Piscicides applied to stream water will be neutralized at the lower end of the treatment site using potassium permanganate.

Will the use of piscicides affect drinking water?
Human consumption of water within treatment areas and approximately ½ mile downstream of the rotenone neutralization station will be restricted during treatment and for 3 to 14 days after treatment, in accordance with EPA rotenone label guidelines. Any compounds that remain in the water at the downstream end of a treatment area are neutralized using potassium permanganate, thus there will be no long-term negative effects on water quality. Piscicide treatments will not affect groundwater.

Does this work include closures to recreational activities or access by hikers or stock users?
This work will not permanently close areas to recreational activities or access by hikers or stock users. There will be short-term closures associated with each piscicide treatment (during treatment and for 3 to 14 days after treatment).

Will I still be able to fish in the parks?
Fishing is a welcomed and popular form of recreation and will continue to be available and promoted throughout the parks. Nonnative trout will remain in 465 lakes, ponds, and marshes and hundreds of miles of streams. We will continue to provide outstanding fishing opportunities suited to a variety of interests and abilities. Lakes, ponds, and marshes proposed for trout removal in this project were selected to avoid most lakes with a reputation for good fishing.

How will this project affect area businesses?
This project will have little to no impacts on area businesses. The number of visitors accessing the parks for fishing is not expected to decrease, and the number of lakes available for recreational fishing will remain plentiful. A total of 465 lakes, ponds, and marshes, including the majority of "destination" areas, will still be available for fishing.

Where can I find more information?
The complete restoration plan, along with background materials, is available on the National Park Service's Public Comment and Environmental Compliance website at http://parkplanning.nps.gov/aquatics.